

HISTORIC PROPERTY INVENTORY FORM

IDENTIFICATION SECTION

Field Site No. 2614-E-2 **OAHP No.** _____ **Date Recorded** 20 Aug 1996
Site Name Historic General Monitoring Station **Revised** 15 July 1997
Common Air Monitor Station
Field Recorder M.S. Gerber
Owner's Name U.S. Department of Energy, Richland Operations Office
Address P.O. Box 550
City/State/Zip Code Richland, WA 99352

Status

- ☒ Survey/Inventory
☐ National Register
☐ State Register
☐ Determined Eligible
☐ Determined Not Eligible
☐ Other (HABS, HAER, NHL)
☐ Local Designation

Photography

Hanford Photography Lab
Photography Neg. No. Neg. #96080189-23 and -26 CN
(Roll No. & Frame No.)
View of East
Date August 1996

Photo at right: 96080189-23
Looking east

Classification

☐ District ☐ Site ☒ Building ☐ Structure ☐ Object
☒ NR ☐ SR ☐ LR ☐ INV
Contributing ☒ **Non-Contributing** ☐
District/Thematic Nomination Name Hanford Site Manhattan Project and Cold War Era Historic District

Description Section

Materials & Features/Structural Types

Building Type Industry
Plan Square
Structural System Wood Frame
No. of Stories One

Roof Type

☐ Gable ☐ Hip
☐ Flat ☐ Pyramidal
☐ Monitor ☐ Other (specify)
☐ Gambrel
☒ Shed

Roof Material

☐ Wood Shingle
☐ Wood Shake
☐ Composition
☐ Slate
☒ Tar/Built-up
☐ Tile
☐ Metal (specify)
☐ Other (specify)
☐ Not visible

Foundation

☐ Log ☐ Concrete
☐ Post & Pier ☐ Block
☐ Stone ☒ Poured
☐ Brick ☐ Other (specify)
☐ Not visible

Cladding (Exterior Wall Surfaces)

☐ Log
☒ Horizontal Wood Siding
☐ Rustic/Drop ☒
☐ Clapboard
☐ Wood Shingle
☐ Board and Batten
☐ Vertical Board
☐ Asbestos/Asphalt
☐ Brick
☐ Stone
☐ Stucco
☐ Terra Cotta
☐ Concrete/Concrete Block
☐ Vinyl/Aluminum Siding
☐ Metal (specify)
☐ Other (specify)

Integrity

(Include detailed description in
Description of Physical Appearance)

	Intact	Slight	Moderate	Extensive
Changes to plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to windows	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to original cladding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to interior	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

State of Washington, Department of Community Development
Office of Archaeology and Historic Preservation
111 21st Avenue Southwest, Post Office Box 48343
Olympia, Washington 98504-8343 (206)753-4011

LOCATION SECTION

Address Building 2614-E-2, 200 East Area
City/Town/County/Zip Code Richland/Benton County/99352
Twp. 12 N Range 26 E Section 3 1/4 Section SW 1/4 1/4 Sec SW
Tax No./Parcel No. _____ **Acreage** _____
Quadrangle or map name Gable Butte, Washington Quad. - 7.5 min. series 1986
UTM References Zone 11 Easting Northing
Plat/Block/Lot _____
Supplemental Map(s) _____



High Styles/Forms (Check one or more of the following)

<input type="checkbox"/> Greek Revival	<input type="checkbox"/> Spanish Colonial Revival/Mediterranean
<input type="checkbox"/> Gothic Revival	<input type="checkbox"/> Tudor Revival
<input type="checkbox"/> Italianate	<input type="checkbox"/> Craftsman/Arts & Crafts
<input type="checkbox"/> Second Empire	<input type="checkbox"/> Bungalow
<input type="checkbox"/> Romanesque Revival	<input type="checkbox"/> Prairie Style
<input type="checkbox"/> Stick Style	<input type="checkbox"/> Art Deco/Art Moderne
<input type="checkbox"/> Queen Anne	<input type="checkbox"/> Rustic Style
<input type="checkbox"/> Shingle Style	<input type="checkbox"/> International Style
<input type="checkbox"/> Colonial Revival	<input type="checkbox"/> Northwest Style
<input type="checkbox"/> Beaux Arts/Neoclassical	<input type="checkbox"/> Commercial Vernacular
<input type="checkbox"/> Chicago/Commercial Style	<input type="checkbox"/> Residential Vernacular (see below)
<input type="checkbox"/> American Foursquare	<input checked="" type="checkbox"/> Other (specify)
<input type="checkbox"/> Mission Revival	<input type="checkbox"/> Industrial Vernacular

Vernacular House Types

<input type="checkbox"/> Gable Front	<input type="checkbox"/> Cross Gable
<input type="checkbox"/> Gable Front and Wing	<input type="checkbox"/> Pyramidal/Hipped
<input type="checkbox"/> Side Gable	<input type="checkbox"/> Other (specify)

NARRATIVE SECTION

Study Unit Themes (check one or more of the following)

- ☐ Agriculture
- ☐ Architecture/Landscape Architecture
- ☐ Arts
- ☐ Commerce
- ☐ Communications
- ☐ Community Planning/Development

- ☐ Conservation
- ☐ Education
- ☐ Entertainment/Recreation
- ☐ Ethnic Heritage (specify) _____
- ☐ Health/Medicine
- ☐ Manufacturing/Industry
- ☐ Military

- ☐ Politics/Government/Law
- ☐ Religion
- ☐ Science & Engineering
- ☐ Social Movements/Organizations
- ☐ Transportation
- ☒ Other (specify) Manhattan Project and Cold War Era
- ☒ Study Unit Sub-Theme(s) Health Safety, Facilities Support (Air Monitor); Health Safety, Medical

Statement of Significance

Date of Construction	1944	Architect/Engineer/Builder	E.I. du Pont de Nemours Corporation
<input checked="" type="checkbox"/>	In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.		
<input checked="" type="checkbox"/>	In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).		

The 2614-E-2 General Monitor Station was constructed in World War II as one of 29 such stations built to serve as a data collection station for one of the world's most unique and pioneering environmental monitoring programs in existence at that time. The air monitoring program at Hanford was considered a crucial aspect of operations by the du Pont Corporation and the U.S. Army Corps of Engineers. It was realized in 1942, before the construction of the Hanford Engineer Works, that unique and toxic emission would be generated, especially by the operations of the chemical separations plants. The most salient hazard of separations plant operations occurred in the dissolving step, when irradiated fuel elements from Hanford's reactors were dissolved in the "head ends" of the plants in order to place them in liquid solution form.

In order to study the dissolving process, du Pont brought a meteorology crew to Hanford in 1943 to characterize localized air current patterns at and near the site. The du Pont meteorological team developed a series of air dilution models that were typical for the region and then developed a set of parameters to define favorable dissolving conditions. Conditions were rated based upon wind dilution factors. If the wind dilution factor was greater than 1000 to one (the ratio of air to exhaust gas volume), dissolving conditions were rated as "favorable." Factors between 500-1000 to one were considered "moderately favorable," and factors lower than 500 to one were considered "unfavorable." A meteorology tower was constructed between the 200 East and 200 West Areas to provide forecasting services, and the 29 air monitoring stations were constructed to house equipment to test the success of the air dilution and control program. 27 of the structures were located on the Hanford Site and in Richland and two were located outside the project boundaries. The highest density of stations was located in the chemical separations areas (six in the 200 East Area and six in the 200 West Area). The stations in the 200 East Area were primarily aimed at monitoring the operations of the 221-B Building (B Plant), while those in the 200 West Area were aimed at monitoring the operations of the 221-T Building (T-Plant).

The air monitoring stations contained continuous samplers that periodically were analyzed at Hanford Site laboratories for alpha and beta particle activity. The alpha analysis looked for plutonium oxide dust and the beta analysis looked primarily for the major airborne isotopes of concern, including Iodine-131 and Xenon-133.

The usefulness of the air monitoring program was proven immediately with the first dissolving of irradiated fuel elements at T Plant in December of 1944. Du Pont scientists reported that this dissolving "resulted in the first significant plant discharge of radio xenon and iodine (1,000 curies) into the atmosphere at Hanford" (du Pont, HAN-73214, Book 12, p. 65). As monitoring continued and data became consistent (and worrisome), the decision was made in June 1945 to shift dissolving operations to night times only. Under certain conditions in 1945, Hanford employees were required to don assault masks when they reported for work in the 200 Areas. In addition, thyroid checks were begun due to the threat of Iodine-131. The air monitoring stations continued to function, with some equipment upgrades, through the early 1960s when they were replaced by modern air sampling facilities.

The 2614-E-2 Building, located near the western entrance of the 200 East Area, served a crucial role in determining the atmospheric content of Iodine-131 and Xenon-133 as employees entered the 200 East Area. As a result it was a prime indicator for the unique air monitoring project at Hanford. It is therefore the conclusion of the U.S. Department of Energy that Building 2614-E-2 is eligible for inclusion in the National Register of Historic Places under Criterion A as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

HISTORIC PROPERTY INVENTORY FORM
Building 2614-E-2 (Continuation Sheet 1 of 1)

Description of Physical Appearance

The 2614-E-2 Building is a single room, 6.75 foot square, wood frame building clad with horizontal drop siding. The building has a shed roof with built up felt roofing and an insulated asbestos board ceiling. There is a 16 inch square, raised ventilator covered with louvers in the center of the roof. The building sits on an eight inch thick, poured concrete foundation. There is one pedestrian door and no windows. Pumps and monitoring equipment were placed the station, such that air was drawn through filter samplers and then checked and recorded when technicians visited the building and brought the filter papers into laboratories for analysis. A gamma monitoring device was placed in the louvered cupola on the building's roof. The facility was heated with an electric heater until it was been abandoned in the early 1960s.

Major Bibliographic References

- E.I. du Pont de Nemours Corporation. 1945. Construction of Hanford Engineer Works: History of the Project . HAN-10970, Vol. 3. Wilmington, Delaware.
- E.I. du Pont de Nemours Corporation. 1946. Operation of Hanford Engineer Works: History of the Project . HAN-73214, (Books 7 & 12). Wilmington, Delaware.
- Gerber, M.S. 1993. Manhattan Project Buildings and Facilities at the Hanford Site, A Construction History . WHC-MR-0425. Westinghouse Hanford Company, Richland, Washington.
- Soldat, J.K. 1991. "614 Building History." Memo to M.S. Gerber. Pacific Northwest Laboratory, Richland, Washington.